

**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #1 - Wildlife Structures, Low Complexity****Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643, that need installation of wildlife structures, which are of low complexity, when habitat assessment indicates "Inadequate Habitat for Fish or Wildlife-habitat degradation". This scenario includes structures such as: habitat boxes, perch poles, fence markers, down logs and hand built brush piles. Complexity is defined by the combination of skill level, equipment needed and ease of accessibility for creating and installing these structures. For this scenario the complexity would include; general labor with minimal supervision or skilled labor without supervision; common hand tools and light equipment; installation is within a quarter mile of a driveable road; and terrain is gentle to moderate. This practice may be installed alone or in combination with facilitating practices. Facilitating practices may include but not limited to: 382, 391, 647, 660 and 666.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need for wildlife structures with low complexity to bring one or more habitat limiting factors of "Inadequate Habitat for Fish or Wildlife-habitat degradation", up to planning criteria. Upland habitat limiting factors include quality, quantity and continuity of forage, cover, shelter, space and water availability. The structures can be installed within a quarter mile of a driveable road and terrain is gentle to moderate.

**After Situation:**

Installation of wildlife structures brings the identified deficient habitat limiting factors up to planning criteria. The practice is installed using general labor with minimal supervision or skilled labor without supervision with use of common hand tools and light equipment.

**Scenario Feature Measure:** Number of structures

**Scenario Unit:** Each

**Scenario Typical Size:** 4

**Scenario Cost:** \$1,331.57

**Scenario Cost/Unit:** \$332.89

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Auger, Post driver attachment	934	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	\$8.18	1	\$8.18
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$6.16	2	\$12.32
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.36	2	\$72.72
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$22.93	1	\$22.93
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.96	16	\$367.36
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.50	1	\$24.50
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$45.14	8	\$361.12
<b>Materials</b>						
Habitat Box, Bat	246	BAT-1 Bat House Single. Includes materials and shipping.	Each	\$52.08	2	\$104.16
Habitat Box, waterfowl	1449	Wood Duck Box, typically 24" x 11" x 12" with 4" wide oval entrance, single. Includes material and shipping only.	Each	\$69.82	2	\$139.64
Predator Guard	1461	Predator guards (i.e. stove pipes, cone, hole guard, etc.) for habitat boxes. Materials only. Includes material and shipping only.	Each	\$28.58	4	\$114.32
Post, Wood, CCA treated, 6" x 12-14'	13	Wood Post, Line/End 6" X 12-14', CCA Treated. Includes materials and shipping only.	Each	\$26.08	4	\$104.32

**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #2 - Wildlife Structures , High Complexity****Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643, that need installation of wildlife structures, which are of high complexity, when habitat assessment indicates "Inadequate Habitat for Fish or Wildlife-habitat degradation". This scenario includes all the structures in the Wildlife Structures-low but whose installation is highly complex. This scenario may include the installation of structures that require the use of heavy (150+ horse power) sized equipment. Complexity is defined by the combination of skill level, equipment needed and ease of accesability for creating and installing these structures. For this scenario the complexity would include: skilled labor and general labor with supervision; common hand tools to heavy equipment; for many of the structures, installation is within a mile of a road: and terrain is moderate to difficult. Facilitating practices may include but not limited to: 382, 391, 647, 660 and 666.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need for wildlife structures of high intensity and/or high complexity to bring one or more habitat limiting factors of "Inadequate Habitat for Fish or Wildlife-habitat degradation", up to planning criteria. Habitat limiting factors include quality, quantity and continuity of forage, cover, shelter, space and water availability. The intensity for this scenario is >1 structure per acre. Many of the needed structures can be installed within a mile of a driveable road and the terrain will range from moderate to difficult.

**After Situation:**

Installation of wildlife structures bring the identified deficient habitat limiting factors up to planning criteria. Installation of wildlife structures required skilled labor and general labor with supervision and the use of common hand tools to heavy equipment.

**Scenario Feature Measure: Number of structures****Scenario Unit: Each****Scenario Typical Size: 12****Scenario Cost: \$4,910.55****Scenario Cost/Unit: \$409.21****Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Hydraulic Excavator, .5 CY	930	Track mounted hydraulic excavator with bucket capacity range of 0.3 to 0.8 CY. Equipment and power unit costs. Labor not included.	Hour	\$54.77	6	\$328.62
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$6.16	8	\$49.28
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.36	8	\$290.88
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.96	60	\$1,377.60
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$38.68	6	\$232.08
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$45.14	30	\$1,354.20
<b>Materials</b>						
Predator Guard	1461	Predator guards (i.e. stove pipes, cone, hole guard, etc.) for habitat boxes. Materials only. Includes material and shipping only.	Each	\$28.58	10	\$285.80
Post, Wood, CCA treated, 6" x 12-14'	13	Wood Post, Line/End 6" X 12-14', CCA Treated. Includes materials and shipping only.	Each	\$26.08	12	\$312.96
Habitat Box, Bat	246	BAT-1 Bat House Single. Includes materials and shipping.	Each	\$52.08	5	\$260.40
Habitat Box, waterfowl	1449	Wood Duck Box, typically 24" x 11" x 12" with 4" wide oval entrance, single. Includes material and shipping only.	Each	\$69.82	5	\$349.10

**Mobilization**

**Mobilization**

Mobilization, very small equipment	1137	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$69.63	1	\$69.63
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**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #4 - Monitoring, Management, No Foregone Income - No Training Required, Low Intensity and Low Complexity****Scenario Description:**

Setting is any lands with the potential to provide upland wildlife habitat and that potential is not currently being captured. The identified upland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Upland wildlife habitat management and monitoring needed to treat the resource concerns requires no training, no qualitative data assessment, no water quality monitoring and is low in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan. Facilitating practices may include but not limited to: 314, 315, 327, 342, 380, 384, 390, 391, 422, 472, 490, 511, 528, 550, 612, 647, 650, 654, 660, 666.

**Before Situation:**

Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated upland wildlife species.

**After Situation:**

Based on the results of a State-approved upland wildlife habitat assessment process, the application of upland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate upland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.

**Scenario Feature Measure: Acres Managed and Monitored****Scenario Unit:** Acre**Scenario Typical Size:** 100**Scenario Cost:** \$1,396.55**Scenario Cost/Unit:** \$13.97**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	100	\$16.00
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$30.03	4	\$120.12
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$49.68	16	\$794.88
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.36	4	\$145.44
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$43.67	1	\$43.67
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.96	4	\$91.84
<b>Materials</b>						
Miscellaneous, containers, traps, etc.	298	Pheromone Traps, Culture container with lid. Includes materials and shipping only.	Each	\$3.75	4	\$15.00
<b>Mobilization</b>						
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$169.60	1	\$169.60

**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #5 - Monitoring, Management, Foregone Income - May Require Training, Medium Intensity and Medium Complexity****Scenario Description:**

Setting is any lands with the potential to provide upland wildlife habitat and that potential is not currently being captured. The identified upland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Upland wildlife habitat management and monitoring needed to treat the resource concerns may require training, no qualitative data assessment, no water quality monitoring and is medium in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. Decisions or treatments associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan. Facilitating practices may include but not limited to: 314, 315, 327, 342, 380, 384, 390, 391, 422, 472, 490, 511, 528, 550, 612, 647, 650, 654, 660, 666.

**Before Situation:**

Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated upland wildlife species.

**After Situation:**

Based on the results of a State-approved upland wildlife habitat assessment process, the application of upland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate upland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.

**Scenario Feature Measure:** Acres Managed and Monitored.

**Scenario Unit:** Acre

**Scenario Typical Size:** 100

**Scenario Cost:** \$2,857.05

**Scenario Cost/Unit:** \$28.57

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Acquisition of Technical Knowledge</b>						
Training, Registration Costs	296	Conference Registration Fees	Each	\$133.62	1	\$133.62
Training, Workshops	294	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	\$41.42	1	\$41.42
<b>Equipment/Installation</b>						
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$49.68	16	\$794.88
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$30.03	6	\$180.18
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	100	\$16.00
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$43.67	1	\$43.67
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.36	6	\$218.16
<b>Labor</b>						
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.38	6	\$236.28
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.96	6	\$137.76

**Labor**

Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$45.14	6	\$270.84
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$98.69	6	\$592.14

**Materials**

Miscellaneous, containers, traps, etc.	298	Pheromone Traps, Culture container with lid. Includes materials and shipping only.	Each	\$3.75	6	\$22.50
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**Mobilization**

Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$169.60	1	\$169.60
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**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #6 - Monitoring, Management, Foregone Income - May Require Training, High Intensity and High Complexity****Scenario Description:**

Setting is any lands with the potential to provide upland wildlife habitat and that potential is not currently being captured. The identified upland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Upland wildlife habitat management and monitoring needed to treat the resource concerns may require training, qualitative data assessment, water quality monitoring and is high in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: qualitative data assessment or water quality monitoring, photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. Decisions or treatments associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan. Facilitating practices may include but not limited to: 314, 315, 327, 342, 380, 384, 390, 391, 422, 472, 490, 511, 528, 550, 612, 647, 650, 654, 660, 666.

**Before Situation:**

Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated upland wildlife species.

**After Situation:**

Based on the results of a State-approved upland wildlife habitat assessment process, the application of upland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate upland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.

**Scenario Feature Measure:** Acres Managed and Monitored.

**Scenario Unit:** Acre

**Scenario Typical Size:** 100

**Scenario Cost:** \$3,628.38

**Scenario Cost/Unit:** \$36.28

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Acquisition of Technical Knowledge</b>						
Training, Workshops	294	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	\$41.42	2	\$82.84
Training, Registration Costs	296	Conference Registration Fees	Each	\$133.62	2	\$267.24
<b>Equipment/Installation</b>						
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$30.03	8	\$240.24
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$43.67	2	\$87.34
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	100	\$16.00
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$49.68	16	\$794.88
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.36	8	\$290.88
<b>Labor</b>						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$45.14	8	\$361.12
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.96	8	\$183.68

**Labor**

Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$98.69	8	\$789.52
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.38	8	\$315.04

**Materials**

Miscellaneous, containers, traps, etc.	298	Pheromone Traps, Culture container with lid. Includes materials and shipping only.	Each	\$3.75	8	\$30.00
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**Mobilization**

Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$169.60	1	\$169.60
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**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #7 - Topographic Feature Creation, Low****Scenario Description:**

The setting is all landuses, but typically is on lands used for the production of forest products grazing and/or fish and wildlife where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for upland wildlife is the absence of sufficient variability in microtopographic relief in the area. The construction of low intensity and low complexity topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for upland wildlife. The construction of micro and macro topographic features can be implemented with the use of equipment with less than 70 HP. This scenario is for earthwork, not associated with habitat structures or any other national standard.

**Before Situation:**

The site lacks sufficient micro- and macrotopographic features needed for optimal upland wildlife habitat for target species. Typically the site has been previously manipulated and utilized for agricultural, livestock or forest production. With the loss of hummocks, depressions and other topographic features scattered throughout the site, both plant and animal species that are dependent on the microenvironments created by these features are no longer present or are in decline within the planning unit.

**After Situation:**

Appropriate low horsepower equipment, such as, rubber tired tractor and farm implements (i.e. – box blade, scraper blade, grader blade, front end-loader, etc) were used to construct planned topographic features essential for identified species. As a result of the installation, the topographic relief needed to provide the varied upland wildlife habitat needs is provided.

**Scenario Feature Measure:** number and size of constructed features

**Scenario Unit:** Acre

**Scenario Typical Size:** 100

**Scenario Cost:** \$13,530.50

**Scenario Cost/Unit:** \$135.31

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Hydraulic Excavator, .5 CY	930	Track mounted hydraulic excavator with bucket capacity range of 0.3 to 0.8 CY. Equipment and power unit costs. Labor not included.	Hour	\$54.77	40	\$2,190.80
Earthfill, Dumped and Spread	51	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.50	10	\$35.00
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.62	10	\$56.20
Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.27	10	\$42.70
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$2.30	10	\$23.00
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	50	\$8.00
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$22.93	40	\$917.20
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.50	40	\$980.00
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.96	40	\$918.40
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.38	40	\$1,575.20
<b>Mobilization</b>						

**Mobilization**

Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$169.60	40	\$6,784.00
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**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #8 - Topographic Feature Creation, Medium****Scenario Description:**

The setting is all landuses, but typically is on lands used for the production of forest products grazing and/or fish and wildlife where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for upland wildlife is the absence of sufficient variability in microtopographic relief in the area. The construction of low intensity and low complexity topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for upland wildlife. The construction of micro and macro topographic features will require the use of equipment in the 70-150 HP range due to current site conditions and implementation techniques. This scenario is for earthwork, not associated with habitat structures or any other national standard (e.g. Wetland Restoration (657), Wetland Enhancement (659), Wetland Creation (658), and Dike (356)).

**Before Situation:**

The site lacks sufficient micro- and macrotopographic features needed for optimal upland wildlife habitat for target species. Typically the site has been previously manipulated and utilized for agricultural, livestock or forest production. With the loss of hummocks, depressions and other topographic features scattered throughout the site, both plant and animal species that are dependent on the microenvironments created by these features are no longer present or are in decline within the planning unit.

**After Situation:**

Appropriate equipment (i.e. – Skidsteer, Farm Tractor, Small Dozer, etc) was used to construct planned topographic features essential for identified species. As a result of the installation, adequate habitat needs have been provided.

**Scenario Feature Measure:** number and size of constructed features

**Scenario Unit:** Acre

**Scenario Typical Size:** 100

**Scenario Cost:** \$42,836.55

**Scenario Cost/Unit:** \$428.37

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
	1145				10	
	1143				10	
	1141				10	
	1276				100	

**Equipment/Installation**

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.27	15	\$64.05
Hydraulic Excavator, 1 CY	931	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	\$111.56	60	\$6,693.60
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.73	60	\$3,943.80
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	50	\$8.00
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$2.30	15	\$34.50
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.62	15	\$84.30
Earthfill, Dumped and Spread	51	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.50	15	\$52.50
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$53.41	60	\$3,204.60
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$54.77	60	\$3,286.20
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$42.21	60	\$2,532.60
Track Loader, 95HP	935	Equipment and power unit costs. Labor not included.	Hour	\$86.61	60	\$5,196.60

**Equipment/Installation**

Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$121.59	60	\$7,295.40
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**Labor**

Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.38	60	\$2,362.80
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.96	60	\$1,377.60
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.50	60	\$1,470.00
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$45.14	60	\$2,708.40

**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	10	\$2,521.60
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**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #9 - Topographic Feature Creation, High****Scenario Description:**

Corrective measures will require the use of equipment 150 HP in size or larger due to current site conditions and implementation techniques. The setting is all landuses, but typically is on lands used for the production of forest products grazing and/or fish and wildlife where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for upland wildlife is the absence of sufficient variability in microtopographic relief in the area. The construction of low intensity and low complexity topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for upland wildlife. The construction of micro and macro topographic features will require the use of equipment 150 HP in size or larger due to current site conditions and implementation techniques. This scenario is for earthwork, not associated with habitat structures or any other national standard (e.g. Wetland Restoration (657), Wetland Enhancement (659), Wetland Creation (658), and Dike (356)).

**Before Situation:**

The site lacks sufficient micro- and macrotopographic features needed for optimal upland wildlife habitat for target species. Typically the site has been previously manipulated and utilized for agricultural, livestock or forest production. With the loss of hummocks, depressions and other topographic features scattered throughout the site, both plant and animal species that are dependent on the microenvironments created by these features are no longer present or are in decline within the planning unit.

**After Situation:**

Appropriate equipment (i.e. – Dozer, Excavator, etc) was used to construct planned topographic features essential for identified species. As a result of the installation, adequate habitat needs have been provided.

**Scenario Feature Measure:** number and size of constructed features

**Scenario Unit:** Acre

**Scenario Typical Size:** 100

**Scenario Cost:** \$51,149.60

**Scenario Cost/Unit:** \$511.50

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
	1141				20	
	1276				100	
	1144				20	
	1145				20	

**Equipment/Installation**

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.27	20	\$85.40
Hydraulic Excavator, 2 CY	932	Track mounted hydraulic excavator with bucket capacity range of 1.5 to 2.5 CY. Equipment and power unit costs. Labor not included.	Hour	\$186.48	80	\$14,918.40
Dozer, 200 HP	928	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	\$182.35	80	\$14,588.00
Earthfill, Dumped and Spread	51	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.50	20	\$70.00
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.62	20	\$112.40
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$2.30	20	\$46.00
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	50	\$8.00

**Labor**

Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.38	80	\$3,150.40
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$45.14	80	\$3,611.20

**Labor**

Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$38.68	80	\$3,094.40
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.96	80	\$1,836.80

**Mobilization**

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$481.43	20	\$9,628.60
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**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #10 - Establish Annual Vegetation - Broadcast w/ Fertilization (FI)****Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643 for the establishment of annual (non-persistent) vegetation on all land uses. This scenario is utilized when habitat assessment indicates Inadequate Habitat for Fish or Wildlife-habitat degradation. The typical size range for this scenario is 5 to 50 acres. This scenario would be applied on any land use where habitats are utilized by targeted species. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat as part of a habitat management system. Often times this scenario is utilized to temporarily provide cover or forage while permanent vegetation is being established. Vegetation will be established utilizing conventional methods including disking, herbicide application and broadcast seeding. Fertilization will be required and will be completed in response to a soil test.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need to establish annual (non-persistent) vegetation to bring one or more habitat limiting factors of inadequate habitat for fish and wildlife, up to planning criteria. An evaluation of the site has indicated resource concerns are present, or may become present during the implementation of the habitat management system planned. Resource concerns identified may include soil erosion with visible rills present resulting in sediment moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The current system provides little to no wildlife habitat with habitat limiting factors such as quality, quantity and continuity of forage, cover, shelter and space being identified.

**After Situation:**

Planning unit is adequately covered with annual (non-persistent) vegetation. As a result of installation soil erosion, water/sediment runoff, and/or dust emissions have been eliminated. Plants sown provide cover and forage for target species. Forage may include the vegetation itself or promote an abundance of beneficial insects. This scenario does not apply to plantings for forage production or critical area plantings and vegetation established under this scenario will remain unharvested.

**Scenario Feature Measure:** Area planted**Scenario Unit:** Acre**Scenario Typical Size:** 25**Scenario Cost:** \$12,179.41**Scenario Cost/Unit:** \$487.18**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$11.65	25	\$291.25
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.28	25	\$157.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.68	25	\$142.00
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$15.37	25	\$384.25
<b>Foregone Income</b>						
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$313.51	12.5	\$3,918.88
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$239.62	6.25	\$1,497.63
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$340.36	6.25	\$2,127.25
<b>Materials</b>						
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.39	1250	\$487.50
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.28	1000	\$280.00
Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$50.33	25	\$1,258.25

**Materials**

Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	25	\$395.75
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.79	1250	\$987.50

**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	1	\$252.16
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**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #11 - Establish Annual Vegetation - Broadcast; No Fertilization (FI)****Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643 for the establishment of annual (non-persistent) vegetation on all land uses. This scenario is utilized when habitat assessment indicates Inadequate Habitat for Fish or Wildlife-habitat degradation. The typical size range for this scenario is 5 to 50 acres. This scenario would be applied on any land use where habitats are utilized by targeted species. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat as part of a habitat management system. Often times this scenario is utilized to temporarily provide cover or forage while permanent vegetation is being established. Vegetation will be established utilizing conventional methods including disking, herbicide application and broadcast seeding. Fertilization will NOT be required.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need to establish annual (non-persistent) vegetation to bring one or more habitat limiting factors of inadequate habitat for fish and wildlife, up to planning criteria. An evaluation of the site has indicated resource concerns are present, or may become present during the implementation of the habitat management system planned. Resource concerns identified may include soil erosion with visible rills present resulting in sediment moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The current system provides little to no wildlife habitat with habitat limiting factors such as quality, quantity and continuity of forage, cover, shelter and space being identified.

**After Situation:**

Planning unit is adequately covered with annual (non-persistent) vegetation. As a result of installation soil erosion, water/sediment runoff, and/or dust emissions have been eliminated. Plants sown provide cover and forage for target species. Forage may include the vegetation itself or promote an abundance of beneficial insects. This scenario does not apply to plantings for forage production or critical area plantings and vegetation established under this scenario will remain unharvested. Fertilization will NOT be required.

**Scenario Feature Measure:** Area planted**Scenario Unit:** Acre**Scenario Typical Size:** 25**Scenario Cost:** \$10,267.41**Scenario Cost/Unit:** \$410.70**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$15.37	25	\$384.25
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.68	25	\$142.00
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$11.65	25	\$291.25
<b>Foregone Income</b>						
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$340.36	6.25	\$2,127.25
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$313.51	12.5	\$3,918.88
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$239.62	6.25	\$1,497.63
<b>Materials</b>						
Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$50.33	25	\$1,258.25
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	25	\$395.75
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	1	\$252.16

**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #12 - Establish Annual Vegetation - Drill w/ Fertilization (FI)****Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643 for the establishment of annual (non-persistent) vegetation on all land uses. This scenario is utilized when habitat assessment indicates Inadequate Habitat for Fish or Wildlife-habitat degradation. The typical size range for this scenario is 5 to 50 acres. This scenario would be applied on any land use where habitats are utilized by targeted species. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat as part of a habitat management system. Often times this scenario is utilized to temporarily provide cover or forage while permanent vegetation is being established. Establishment of vegetation will require methods including light disking, herbicide application and use of seed drill for planting. Fertilization will be required and will be completed in response to a soil test.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need to establish annual (non-persistent) vegetation to bring one or more habitat limiting factors of inadequate habitat for fish and wildlife, up to planning criteria. An evaluation of the site has indicated resource concerns are present, or may become present during the implementation of the habitat management system planned. Resource concerns identified may include soil erosion with visible rills present resulting in sediment moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The current system provides little to no wildlife habitat with habitat limiting factors such as quality, quantity and continuity of forage, cover, shelter and space being identified.

**After Situation:**

Planning unit is adequately covered with annual (non-persistent) vegetation. As a result of installation soil erosion, water/sediment runoff, and/or dust emissions have been eliminated. Plants sown provide cover and forage for target species. Forage may include the vegetation itself or promote an abundance of beneficial insects. This scenario does not apply to plantings for forage production or critical area plantings and vegetation established under this scenario will remain unharvested.

**Scenario Feature Measure:** Area planted**Scenario Unit:** Acre**Scenario Typical Size:** 25**Scenario Cost:** \$11,998.16**Scenario Cost/Unit:** \$479.93**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$19.77	25	\$494.25
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.28	25	\$157.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.68	25	\$142.00
<b>Foregone Income</b>						
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$239.62	6.25	\$1,497.63
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$340.36	6.25	\$2,127.25
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$313.51	12.5	\$3,918.88
<b>Materials</b>						
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.28	1000	\$280.00
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	25	\$395.75
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.39	1250	\$487.50
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.79	1250	\$987.50

**Materials**

Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$50.33	25	\$1,258.25
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**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	1	\$252.16
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**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #13 - Establish Annual Vegetation - Drill; No Fertilization (FI)****Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643 for the establishment of annual (non-persistent) vegetation on all land uses. This scenario is utilized when habitat assessment indicates Inadequate Habitat for Fish or Wildlife-habitat degradation. The typical size range for this scenario is 5 to 50 acres. This scenario would be applied on any land use where habitats are utilized by targeted species. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat as part of a habitat management system. Often times this scenario is utilized to temporarily provide cover or forage while permanent vegetation is being established. Establishment of vegetation will require methods including light disking, herbicide application and use of seed drill for planting. Fertilization will NOT be required.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need to establish annual (non-persistent) vegetation to bring one or more habitat limiting factors of inadequate habitat for fish and wildlife, up to planning criteria. An evaluation of the site has indicated resource concerns are present, or may become present during the implementation of the habitat management system planned. Resource concerns identified may include soil erosion with visible rills present resulting in sediment moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The current system provides little to no wildlife habitat with habitat limiting factors such as quality, quantity and continuity of forage, cover, shelter and space being identified.

**After Situation:**

Planning unit is adequately covered with annual (non-persistent) vegetation. As a result of installation soil erosion, water/sediment runoff, and/or dust emissions have been eliminated. Plants sown provide cover and forage for target species. Forage may include the vegetation itself or promote an abundance of beneficial insects. This scenario does not apply to plantings for forage production or critical area plantings and vegetation established under this scenario will remain unharvested. Fertilization will NOT be required.

**Scenario Feature Measure:** Area planted**Scenario Unit:** Acre**Scenario Typical Size:** 25**Scenario Cost:** \$10,086.16**Scenario Cost/Unit:** \$403.45**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.68	25	\$142.00
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$19.77	25	\$494.25
<b>Foregone Income</b>						
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$239.62	6.25	\$1,497.63
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$340.36	6.25	\$2,127.25
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$313.51	12.5	\$3,918.88
<b>Materials</b>						
Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$50.33	25	\$1,258.25
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	25	\$395.75
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	1	\$252.16

**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #14 - Herbaceous Hand treatment, Invasive Species Control****Scenario Description:**

The practice entails the control of herbaceous, invasive plant species by use of chemical spray, using hand-carried equipment (such as a backpack and hand-sprayer) to apply chemicals, in order to improve ecological condition. Invasives can also be controlled by hand pulling, plastic, or other manual methods. Typical unit is 10 acres. Control requires successive yearly treatments to reduce invasive populations within the area being treated.

Associated Practices: Brush Management (314), Conservation Cover (327), Critical Area Planting (342), Upland Wildlife Habitat Management (645), Early Successional Habitat Development/Management (647)

**Before Situation:**

Area consist of excessive stands of herbaceous invasives degrading health and vigor of native herbaceous species promoting noxious and invasive species and degrading wildlife habitat.

**After Situation:**

Herbaceous invasives are controlled to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and improved wildlife habitat.

**Scenario Feature Measure:** Acres treated

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Scenario Cost:** \$3,246.75

**Scenario Cost/Unit:** \$324.67

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.36	2	\$72.72
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$30.03	2.5	\$75.08
<b>Labor</b>						
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$98.69	30	\$2,960.70
<b>Materials</b>						
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$42.03	2	\$84.06
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shi	Acre	\$1.34	5	\$6.70
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	3	\$47.49

**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #15 - Wood Stemmed, Hand treatment, Invasive Species Control****Scenario Description:**

The practice entails the control of woody stemmed, invasive plant species by use of chemical spray, using hand-carried equipment (such as a backpack and hand-sprayer) to apply chemicals, in order to improve ecological condition. Invasives can also be controlled by hand pulling, plastic, or other manual methods. Typical unit is 10 acres. Control requires successive yearly treatments to reduce invasive populations within the area being treated.

Associated Practices: Brush Management (314), Conservation Cover (327), Critical Area Planting (342), Upland Wildlife Habitat Management (645), Early Successional Habitat Development/Management (647)

**Before Situation:**

Area consist of excessive stands of woody stemmed invasives degrading health and vigor of native species, promoting noxious and invasive species and degrading wildlife habitat.

**After Situation:**

Woody stemmed invasives are controlled to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and improved wildlife habitat.

**Scenario Feature Measure:** Acres treated

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Scenario Cost:** \$3,246.75

**Scenario Cost/Unit:** \$324.67

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$30.03	2.5	\$75.08
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.36	2	\$72.72
<b>Labor</b>						
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$98.69	30	\$2,960.70
<b>Materials</b>						
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	3	\$47.49
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$42.03	2	\$84.06
Herbicide, Surfactant	1095	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Includes materials and shi	Acre	\$1.34	5	\$6.70

**Practice: 645 - Upland Wildlife Habitat Management****Scenario: #16 - Topdressing for Wildlife****Scenario Description:**

Nitrogen, potassium and phosphorus are applied to existing cool season grassland to promote a desirable plant community for wildlife food and cover. Application rate is based on recommendations from a soil test targeting wildlife habitat. Application rate should not be based on production agriculture. Fertilizer is applied during the growing season.

**Before Situation:**

Grass stand is thinning due to lack of nutrients or high acidity in the soil, and no longer provides adequate cover and/or food for grassland nesting birds or other grassland dependent wildlife.

**After Situation:**

Fertilizer has been applied according to a soil test and using appropriate equipment. The new vegetative conditions are conducive to use by target grassland nesting birds and other grassland dependent wildlife.

**Scenario Feature Measure:** Acre of existing grassland

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Scenario Cost:** \$488.80

**Scenario Cost/Unit:** \$48.88

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.28	10	\$62.80
<b>Materials</b>						
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.28	400	\$112.00
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.39	400	\$156.00
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.79	200	\$158.00